

V O L V O

The image features two Volvo trucks side-by-side. On the left is a classic 1920s Volvo truck, dark-colored with a high-top cab, spoked wheels, and a license plate that reads 'M6505'. On the right is a modern Volvo truck, white with a sleek, aerodynamic design, large windows, and modern lighting. The text 'FUTURE TRUCK 2022' and 'THE CHALLENGES ARE HERE TODAY' is overlaid in the center.

FUTURE TRUCK 2022 THE CHALLENGES ARE HERE TODAY

2022-03-29

Technology is driving change



CONNECTIVITY



AUTOMATION

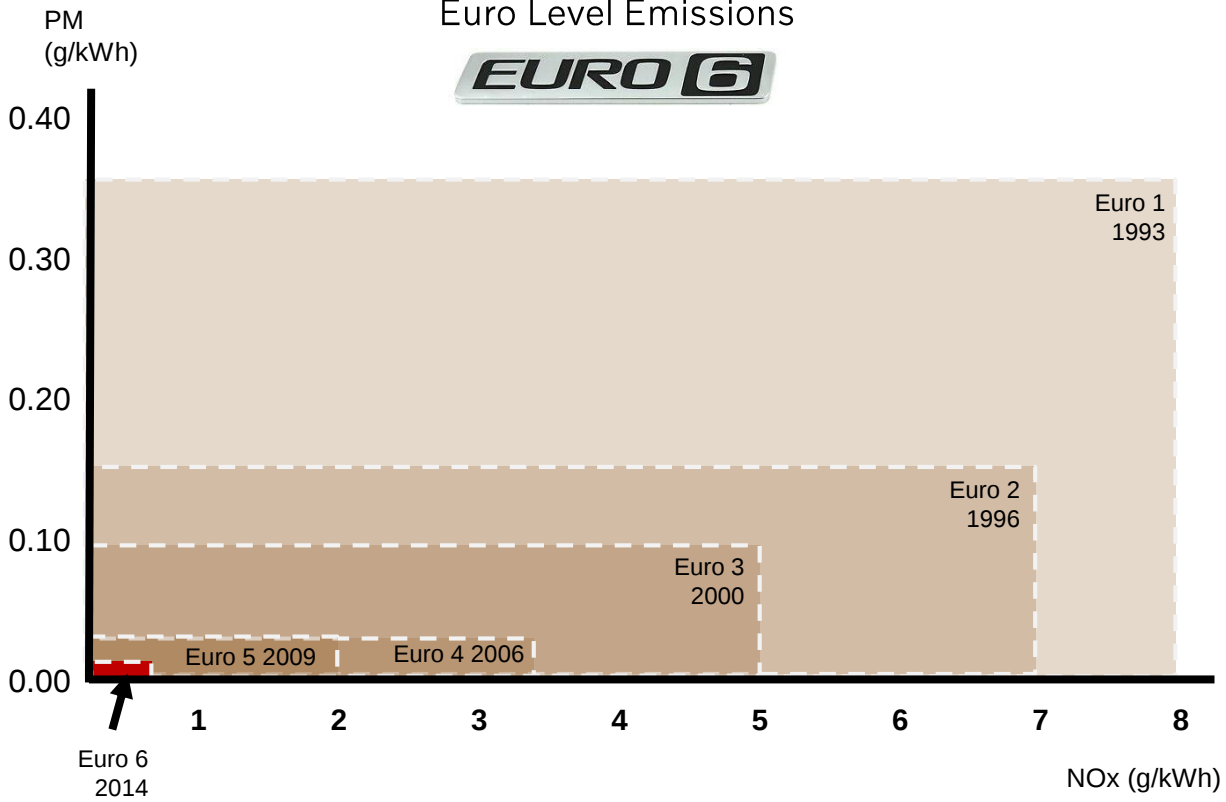


ELECTROMOBILITY

SOFTWARE

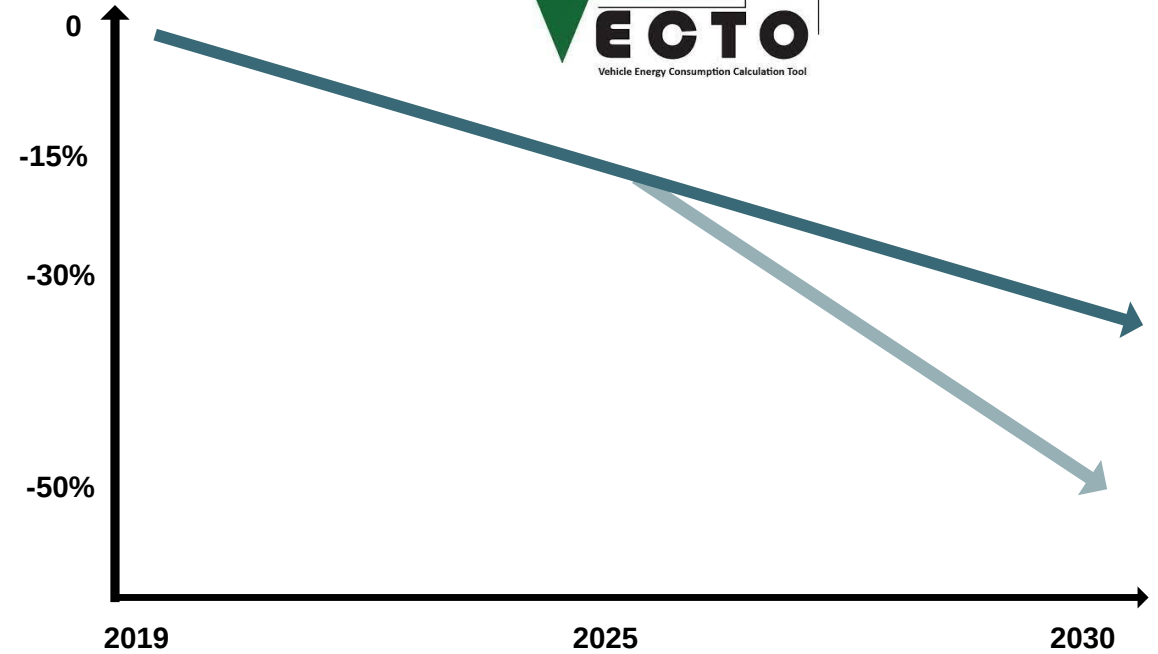
Emission Standards and Frameworks

Air Quality
Euro Level Emissions



Volvo Trucks

Decarbonisation
VECTO



FH Tractor VECTO specifications – changing the base

 **55.64 G/T.KM**



NO delete option
without air deflector package

+ 3.1



2.47 + 0.1



**Dual Clutch
+ 1.2**

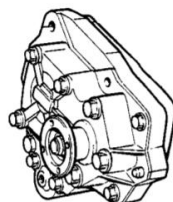


B rated + 1.3 to 1.5

C rated + 2.5 to 2.8



**Retarder
+ 0.4**



**PTO
+ 0.1**

**Application
Recommendation
6x2 Pusher
52.6g/t.km**



Clean lines LED lights and integrated roof spotlights
Cleaner, less noisy and cheaper than bolt on brackets



+ 0.9



+ 0.6



500TC + 0.1

460 + 2.6

500 + 2.6

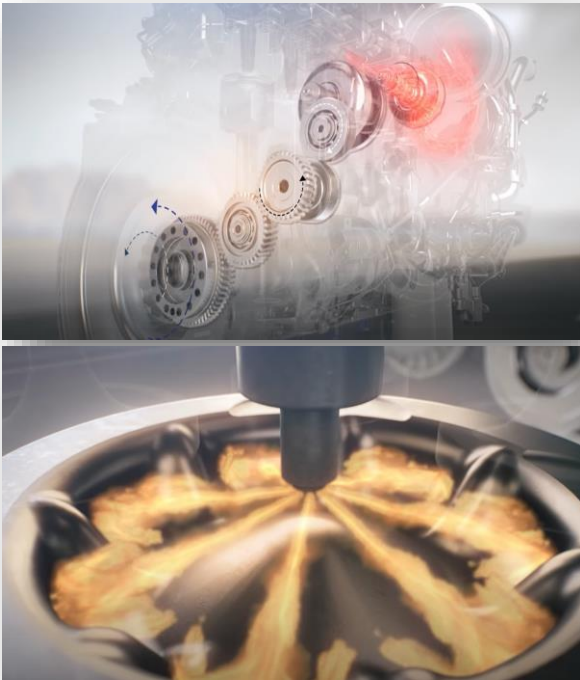
540 + 3.0

Always check your VECTO rating when you complete your specification and include a print off in the vehicle order pack

Well-to-wheel decarbonisation

What are our options?

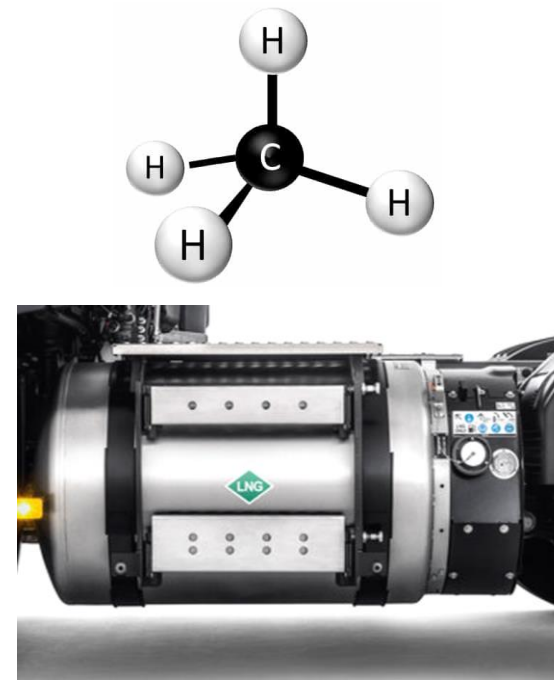
Improving current diesel technology



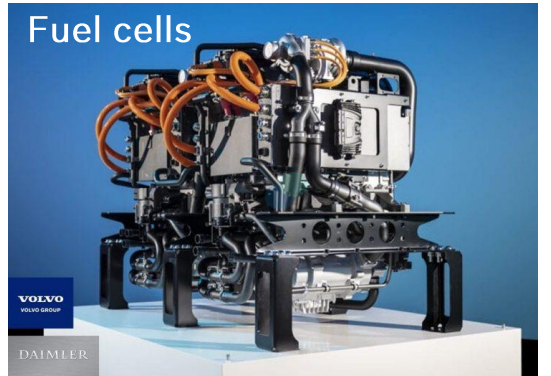
Renewable 'drop-in' fuels



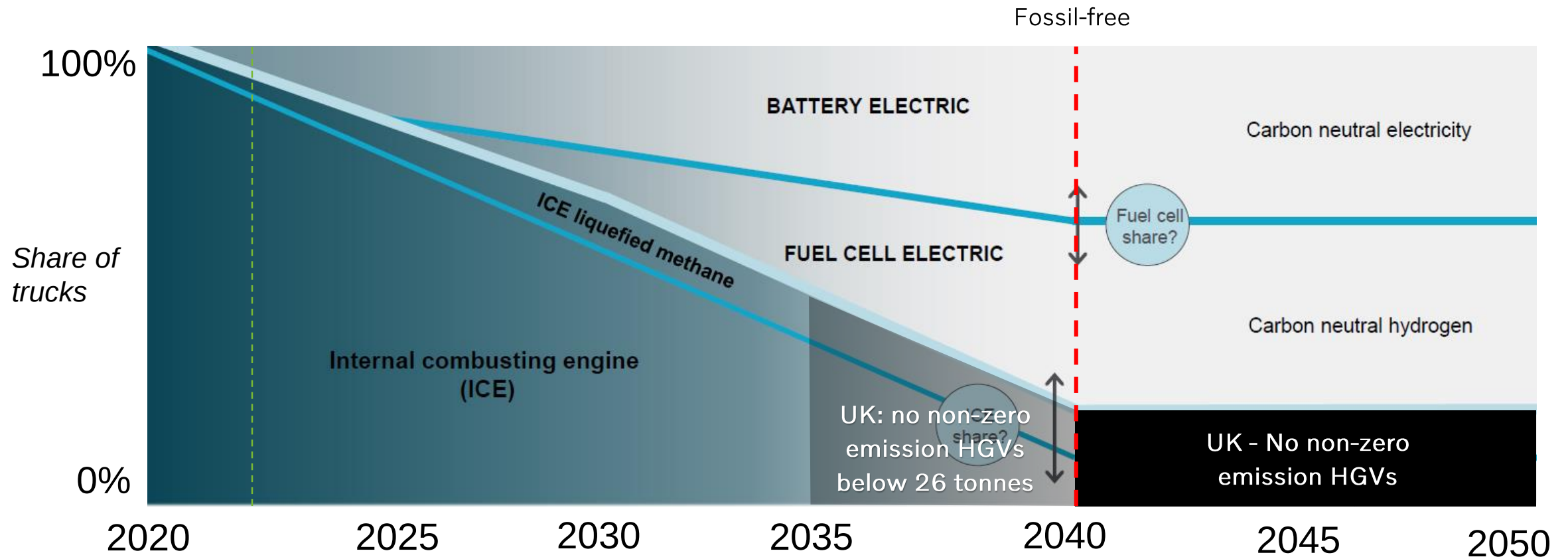
Liquified methane/biomethane



Electric



The Volvo Roadmap

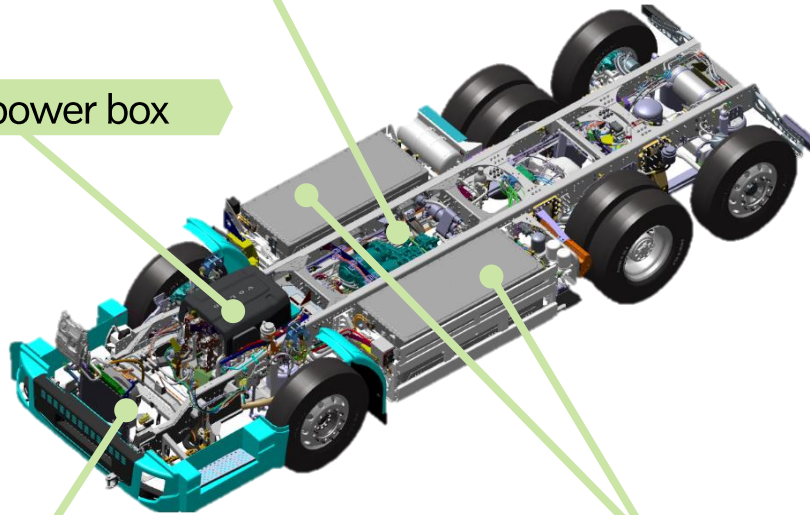
Carbon
fuelCarbon
neutral

Battery Electric Vehicles

Medium Duty Vehicles

Volvo 2-speed transmission and electric motors

Modular power box



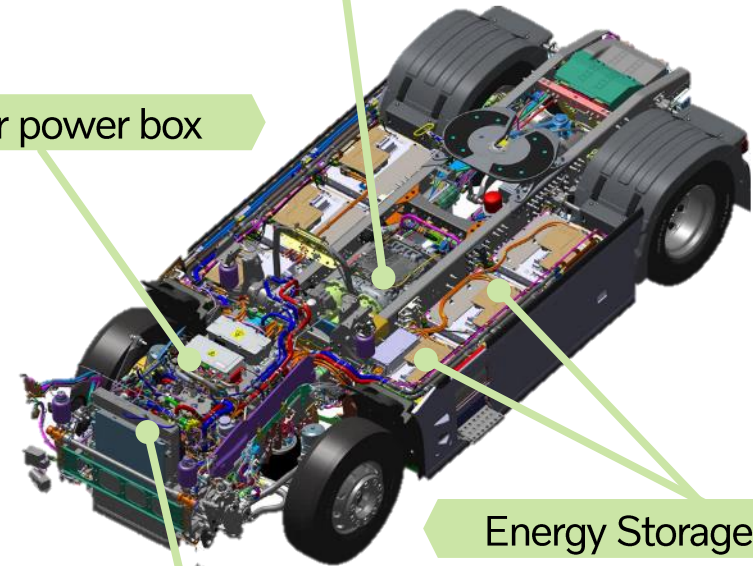
Cooling system

Energy Storage Systems

Heavy Duty Vehicles

Volvo 12-speed transmission and electric motors

Modular power box

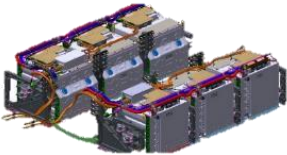


Energy Storage Systems

Cooling system

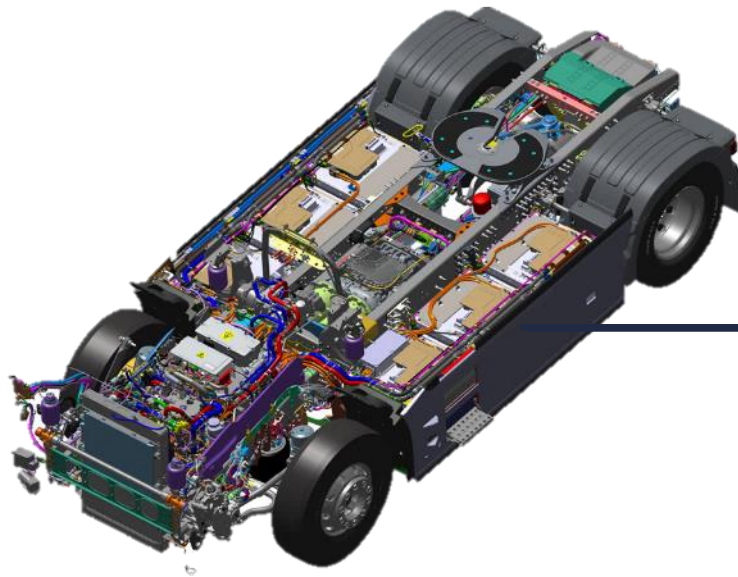
Charging a Volvo Electric Truck

V O L V O

Batteries		Maximum Charging Rate	Approx. Minimum <u>Full</u> Charge Time (4 batteries, 70% SOC)	Charging Infrastructure Solutions
 FE & FL		 Weight: 520 kg Capacity: 66 kWh	AC-charging (slow) up to 22 kW DC-charging (fast) up to 150 kW	AC Charging - 8-9 hours DC Charging - 1-1.5 hours  22 kW wallbox (included with truck) OR Site charging infrastructure solution
 FM, FMX & FH		 Weight: 500 kg Capacity: 90 kWh	AC-charging (slow) up to 43 kW DC-charging (fast) up to 250 kW	AC Charging - 5-6 hours DC Charging - 1-1.5 hours  22-44 kW AC charger OR Site charging infrastructure solution

Energy Density

What's required for 300km of range?



Scale Comparison



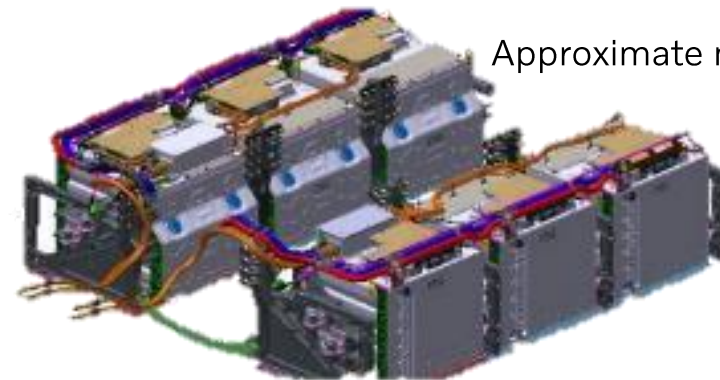
100 litres of diesel + tank

Approximate mass = 130kg



70kg LNG + tank

Approximate mass = 150kg



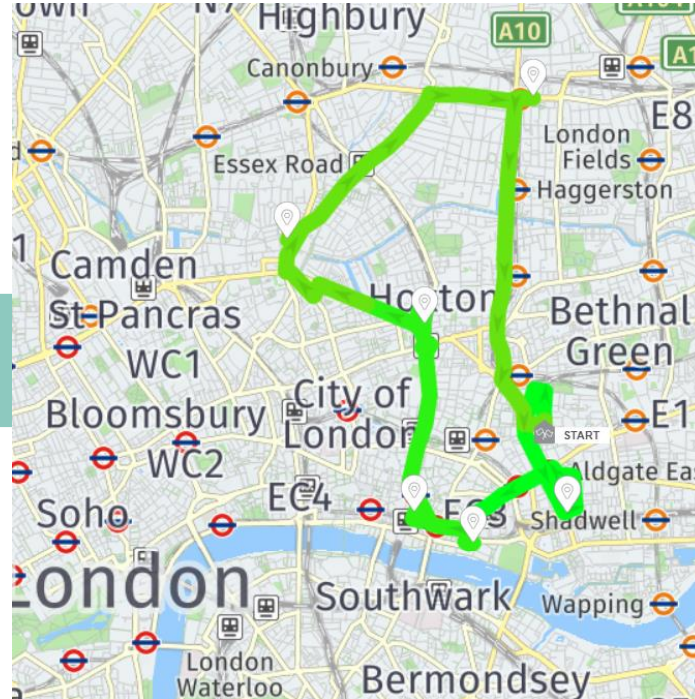
**x6 Energy Storage Systems
432kWh of useable energy**

Approximate mass = 3000kg

The key considerations for adopting electric trucks into an operation



Payload & Axle Configurations

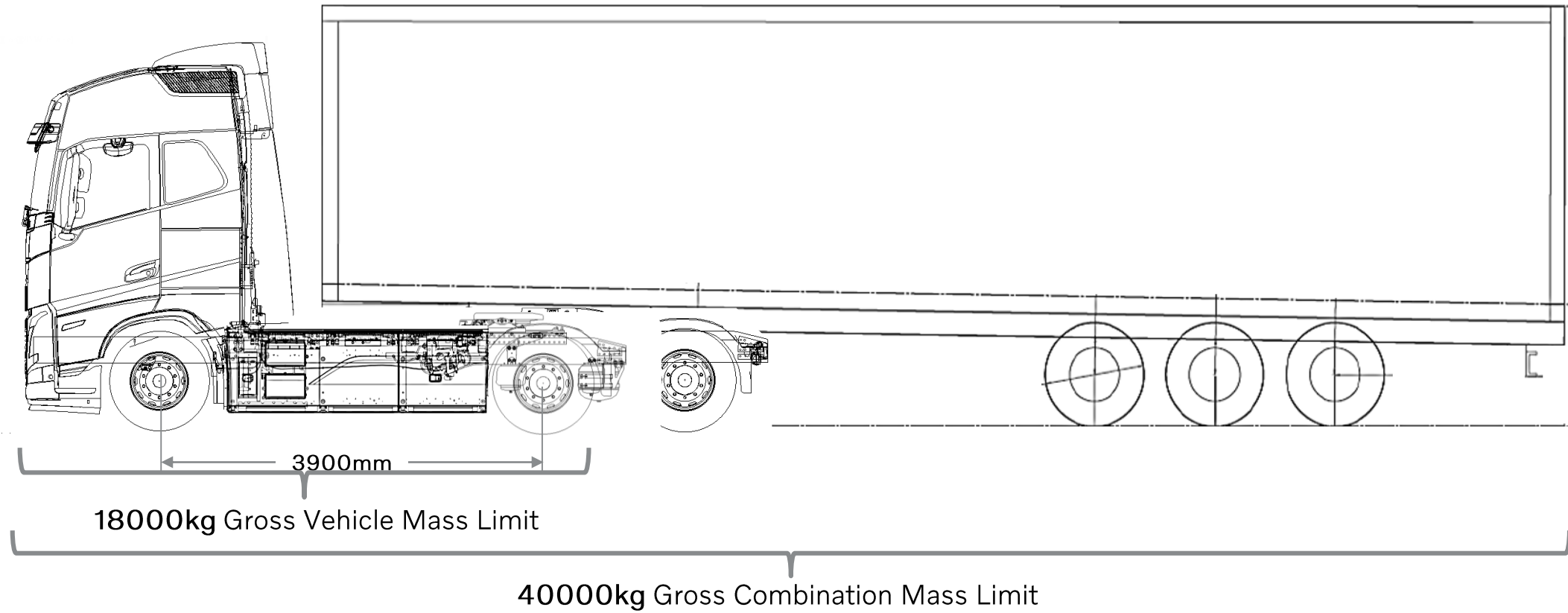


Range



Charging

Vehicle Architecture



A key change for construction

No mass incentive for 4 axle at 32tonne



Electric Tridem



Diesel double front axle



V O L V O

DAIMLER

Daimler Truck

VOLVO
VOLVO GROUP

TRATON
GROUP

A COLLABORATIVE APPROACH

ROUTE
SIMULATIONS

ELECTRIC
TRUCKS

FINANCIAL
SERVICES

CHARGING
INFRASTRUCTURE

MAINTENANCE
& REPAIR

FINANCE

LEASING

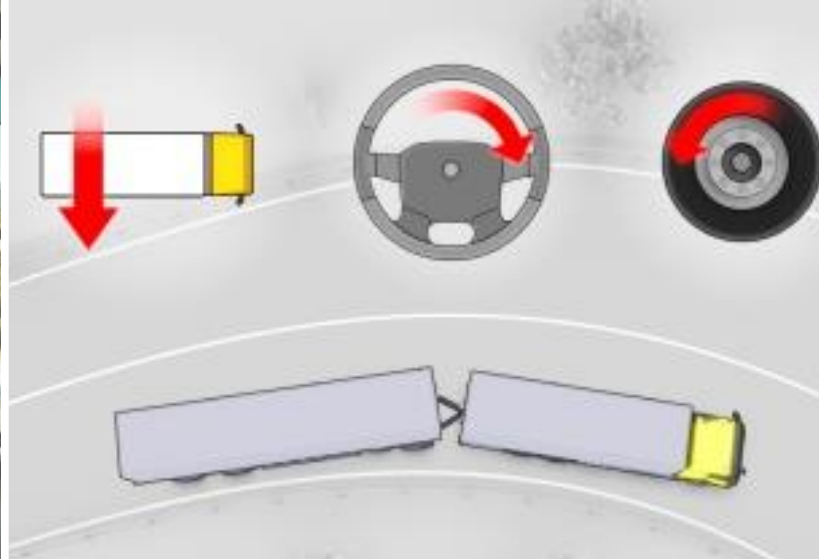
RENTAL

SUBSCRIPTION

Safety - Basic vehicle needs



See
Visibility



Steer
Handling



Stop
Braking

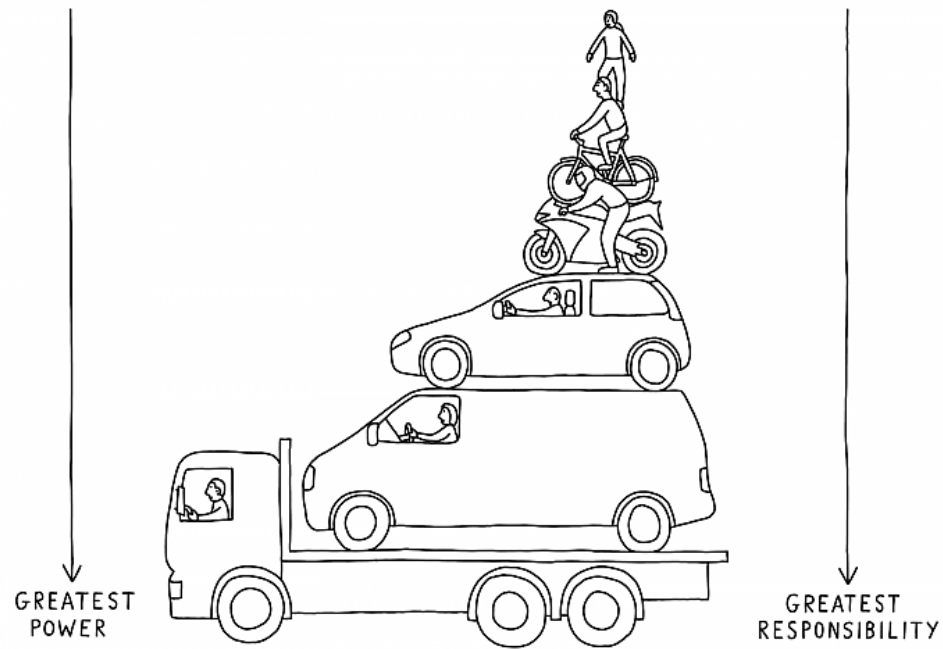
V O L V O

Driver assistance in challenging traffic situations



Increasing awareness
in society

GREATER POWER SHOULD BRING GREATER RESPONSIBILITY



HELP US GET THE HIERARCHY OF RESPONSIBILITY INTO THE HIGHWAY CODE
[CYCLINGUK.ORG/HIGHWAYCODE](https://www.cyclinguk.org/highwaycode)

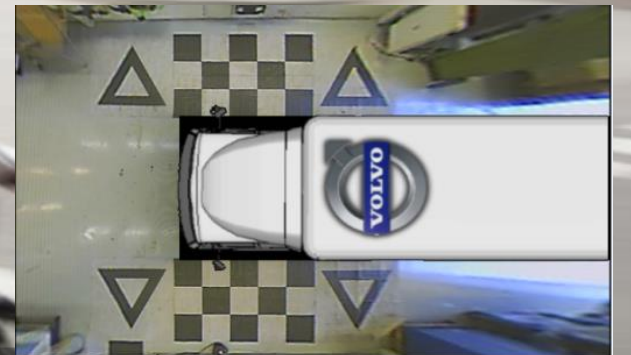


SEE
AND BE
SEEN

Direct Vision or a full safe system approach



Improved Direct Vision

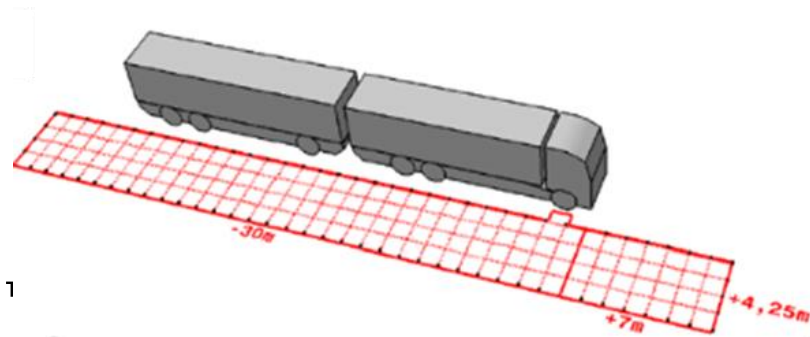


Camera Systems

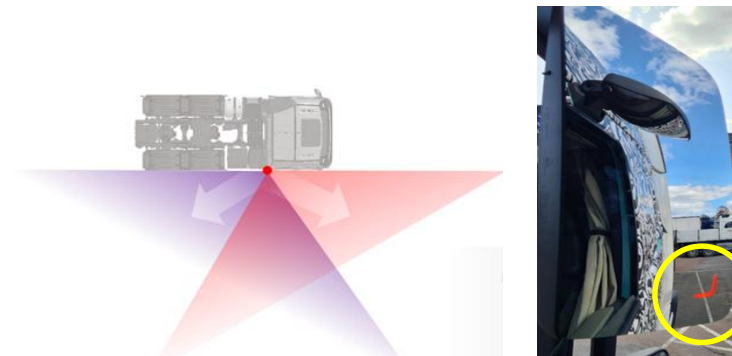
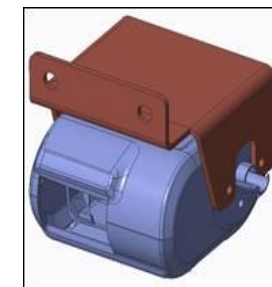
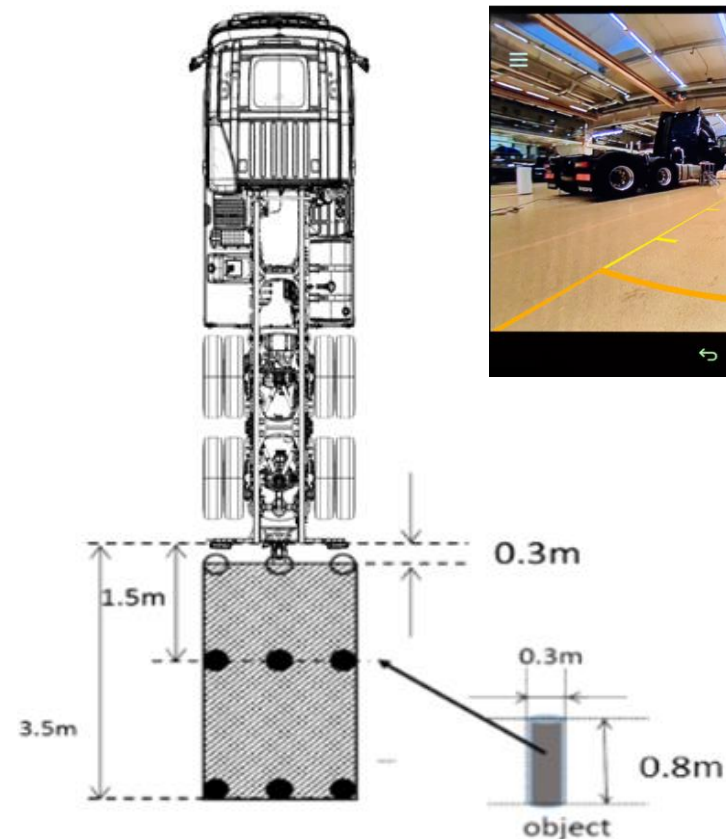
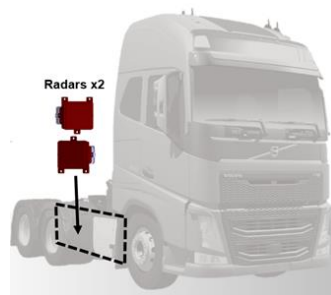
General safety regulation

Mandatory July 2024

- Tyre pressure monitoring TPMS (UN R141)
- Alcohol Interlock installation facilitation (EU 2021/1243)
- Emergency Stop Signal (UN R48.07)
- Moving-Off Information System - MOIS (UN R159)
- Blind spot information system - BSIS (UN R151)
- Reversing safety (UN R158)
- Intelligent Speed Assistance - ISA (EU 2021/1958)
- Cybersecurity

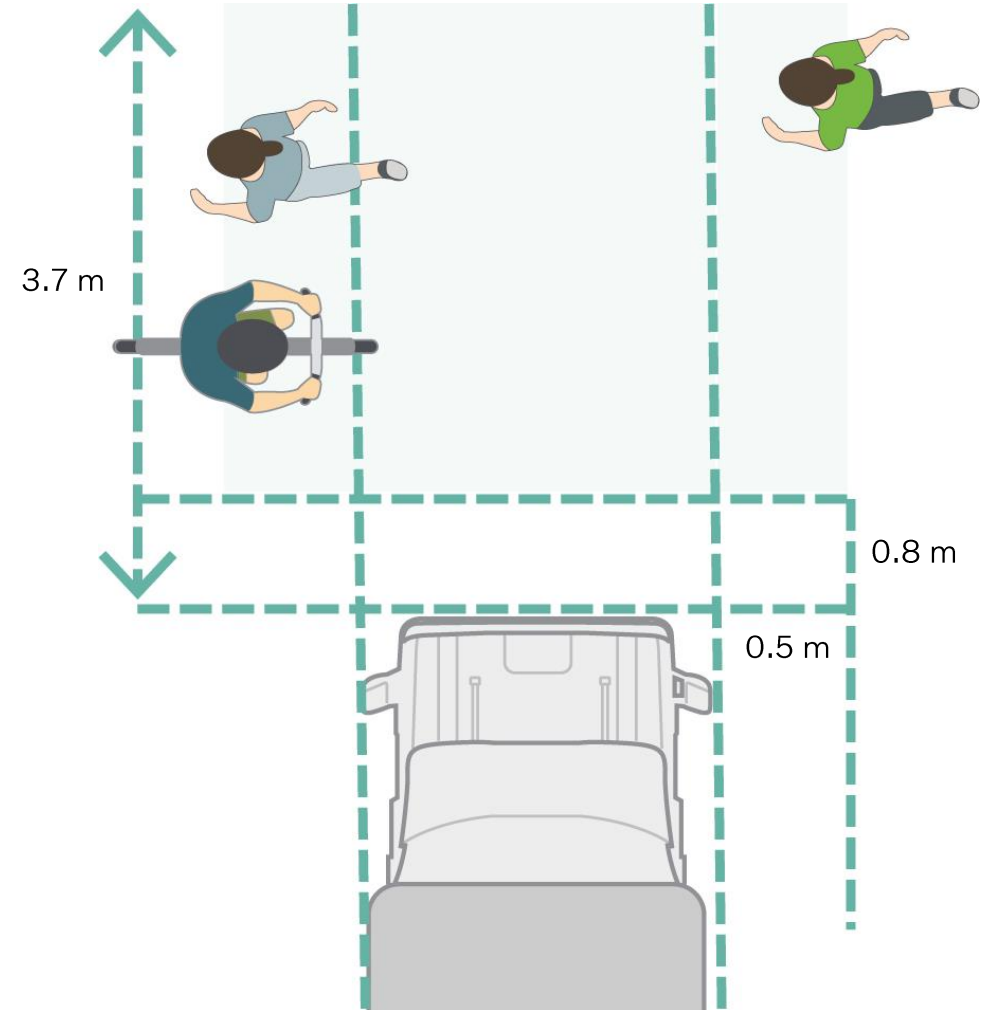


Volvo 1



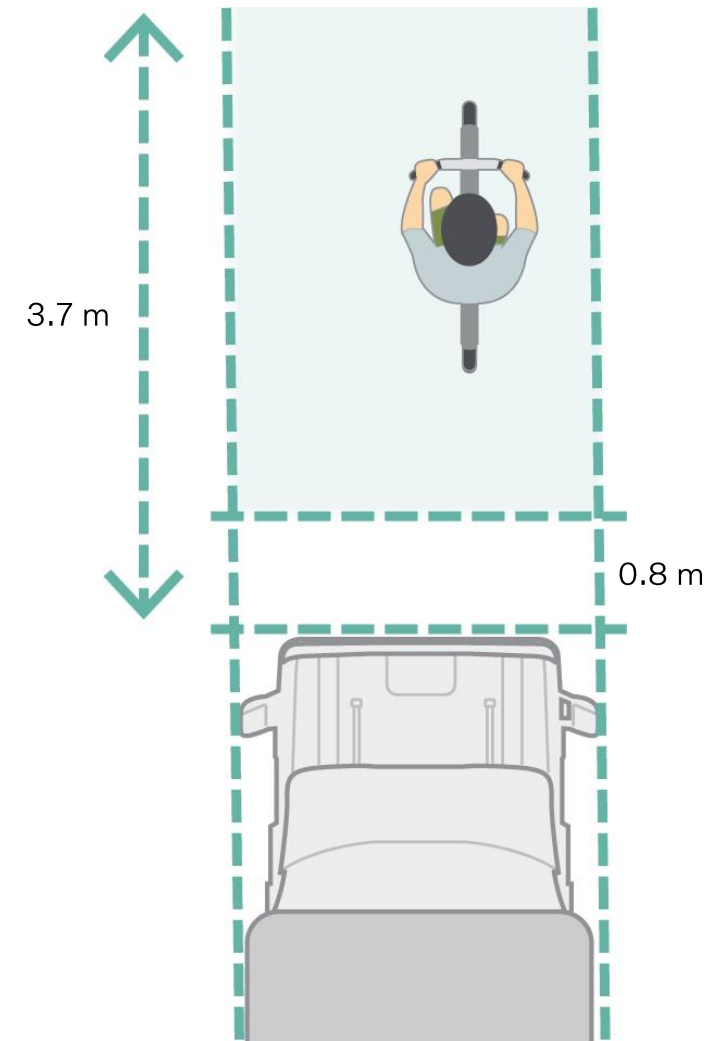
Front detection and warning: What we need to fulfil

- Case 1: Truck stationary
- Information
 - Truck is standing still
 - **And**, vulnerable road user is inside the marked area
- Warning < 10 km/h
 - Driver releases brakes or applies gas
 - **And**, there is an imminent risk

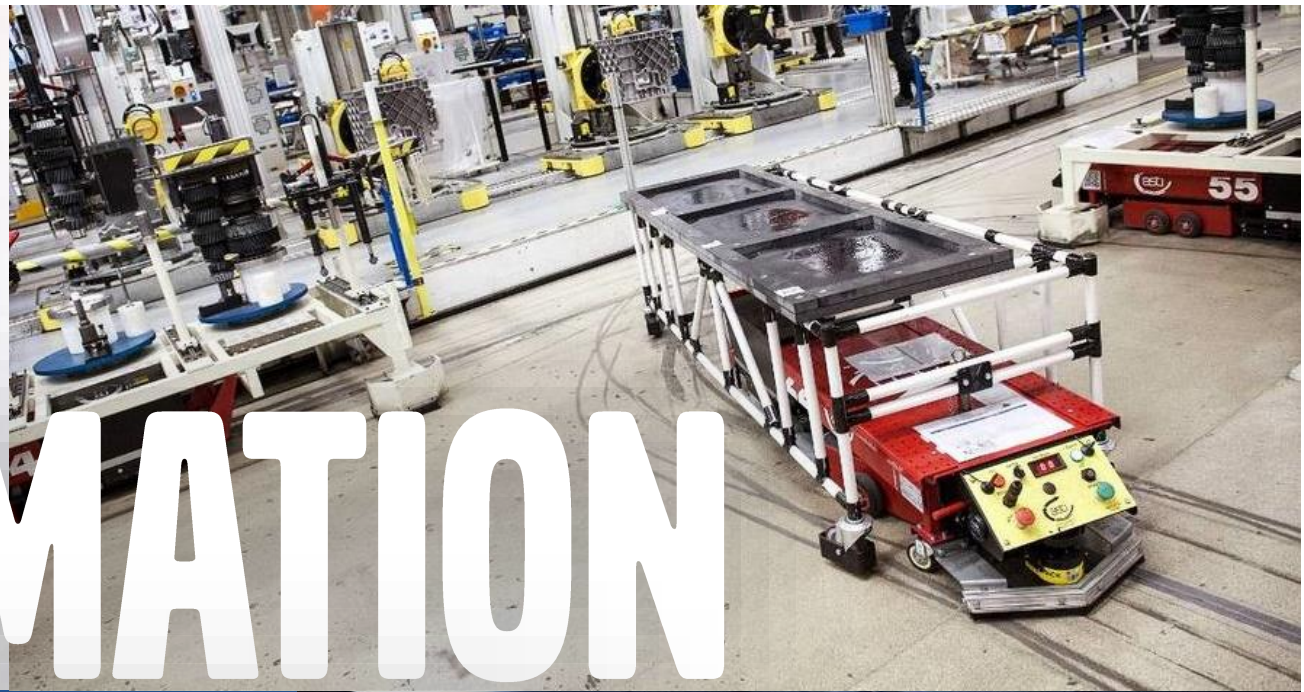


Front detection and warning: What we need to fulfil

- Case 2: Truck driving slowly, <10 km/h
- Information
 - Cyclist stationary or moving in the same direction
 - Inside the marked area
- Warning
 - If system concludes an imminent risk

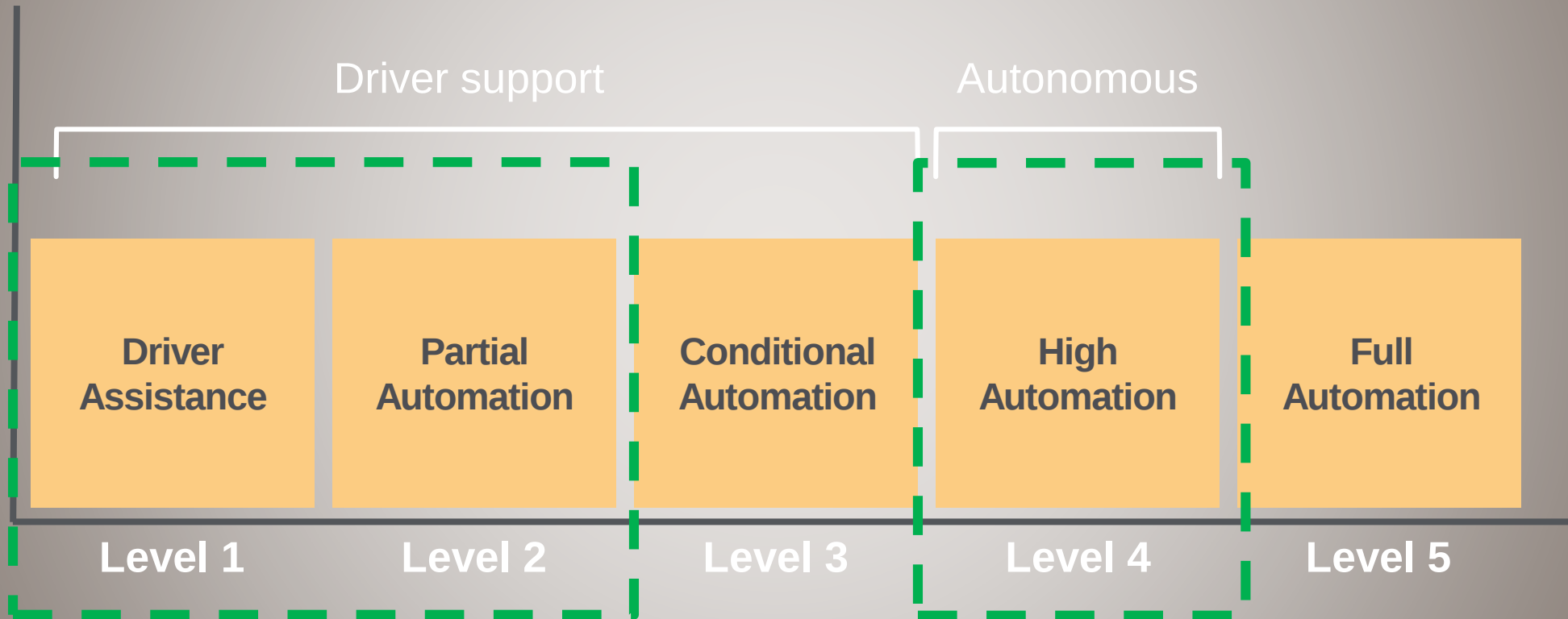






AUTOMATION IN SOCIETY

DIFFERENT OFFERS FOR DIFFERENT SOLUTIONS



ONGOING PILOTS



CONFINED AREAS

1 Mining



PUBLIC ROADS

2 Ports & Logistics Centers

3 Hub-to-hub Highway

Our long term ambitions

Driving prosperity socially, environmentally and financially, means striving for transport and infrastructure solutions that are:

- 100% Safe
- 100% Fossil free
- 100% More productive

than the solutions available today.

V O L V O

Together

WE SHAPE THE WORLD

we want to live in